

Amendment and Response

Applicant: Willard Charles Raymond

Serial No.: 10/622,850

Filed: July 18, 2003

Docket No.: A126,116.102

Title: ADJUSTABLE WAFER ALIGNMENT ARM

REMARKS

This is responsive to the Final Office Action mailed December 7, 2006 and the Advisory Action mailed February 16, 2007. In the Final Office Action, the drawings were objected to under 37 C.F.R. §1.83(a) as not showing every feature of the invention specified in the claims. The Final Office Action also rejected claims 1-4, 6-10, and 14-22 under 35 U.S.C. §103(a) as being unpatentable over Fuke et al., U.S. Patent No. 6,062,795 ("Fuke") in view of Nakamura, U.S. Patent No. 6,236,904 ("Nakamura") and De Anda, U.S. Patent No. 4,754,867 ("De Anda"). Claims 11-13 were rejected under 35 U.S.C. §103(a) as unpatentable over Fuke in view of Nakamura and De Anda as applied to claim 10 above, and further in view of Aoki et al., U.S. Patent No. 5,520,276 ("Aoki"). The Advisory Action maintained the rejections and refused entry of the proposed drawing submitted with an Amendment After Final filed February 7, 2007.

With this Response, the specification and claim 1 has been amended; claim 23 has been added; and a new sheet of drawings presented. Claims 1-4, 6-10, and 12-23 remain pending in the application and are presented for consideration and allowance.

Objection to Drawings

With this Response, the previously-submitted proposed drawing correction has been formally presented in the attached New Sheet and presents new Figures 3A and 3B for entry. Figure 3A illustrates one example of a configuration including "contact elements 40 secured to a shaft extendably connected to the support arm 32" as set forth at page 5, lines 17-18 and in accordance with claim 21. Figure 3B illustrates one configuration of "contact elements 40 mounted to a support plate that is pivotally secured to the support arm 32" as set forth at page 5, lines 19-20 and in accordance with claim 22.

In light of the above, the statement in the Advisory Action that the new figures "raise the issue of new matter" is traversed. Entry of Figures 3A and 3B, along with the corresponding amendment to the specification, is respectfully requested. With entry of Figures 3A and 3B, the objection to the drawings has been overcome.

35 U.S.C. §103 Rejections

The Advisory Action provides no detailed response or analysis of the arguments set forth in the Amendment After Final filed February 7, 2007. The arguments are summarized below, and a complete examination is requested. In addition, it is noted that claim 1 has been amended to recite that the contact elements are laterally moveable relative to the respective support arm. This limitation clearly defines over the arrangement set forth in the Final Office Action of a roller merely being rotatable relative to a support arm. Thus, claim 1 further defines over the cited references.

With respect to the rejection of claim 1, the Final Office Action asserts that it would have been obvious to replace the adjustable contact elements 86a, 86A and/or 86b, 86B of Fuke with the rollers 130, 132 of De Anda. To the extent this rejection is premised upon each of the surfaces 86A and 86a (or 86B and 86b) being replaced by rollers (i.e., relative to the view of FIG. 4C of Fuke, a first, vertical "guide surface" is referenced by the lead line from 86A and a second, horizontal "guide surface" is referenced by the lead line from 86a), Applicant respectfully disagrees. Fuke relies upon a continuous vertical rail surface 86A and 86B to effectuate rotational alignment of a wafer ring as the rails 86A, 86B are drawn toward one another during use. In short, the wafer ring guide means 80 of Fuke must operate to satisfy two purposes: first, to assist in sliding a wafer ring from a cassette, and second, to correct for rotational misalignment or offset. The vertical surfaces 86A and 86B achieve this second parameter, replacing the vertical surface 86A (or 86B) while rollers would not. Thus, the proposed modification would render Fuke unusable for its intended purpose. Under these circumstances, a requisite suggestion to modify does not exist.

Similarly, if the rejection of claim 1 is premised upon replacing the horizontal conveying surface 86a or 86b with a series of rollers 130 of De Anda, necessary functioning of the Fuke apparatus would again be impermissibly defeated. In particular, while the rollers 130 may permit longitudinal conveyance of a wafer ring therealong, the rollers would overtly impede lateral movement of the corresponding rails 86A or 86B. In other words, Fuke requires the presence of a singular, flat face as the conveying surface 86a and 86b so that the surfaces 86a,

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86b can easily slide along the wafer ring as the plates 85A, 85B (and thus the vertical guide rails 86A, 86B) are drawn toward one another in centering a wafer ring being handled. Further, Fuke is premised upon the plate 85A, 85B configuration in which the guide rails 86A, 86B, including the conveying surfaces 86a, 86b, are rigidly affixed to the plates 85A, 85B (so that use of the actuator mechanisms 87a, 87b can translate necessary movement onto the plates 85A, 85B and thus the rails 86A, 86B) in effectuating a wafer ring center operation. Replacing the horizontal conveying surfaces 86a or 86b with a plurality of rollers intended to rotate is impossible; the rollers would be affixed to the plate 85A or 85B (per the teachings of Fuke), and thus could not rotate as otherwise taught by De Anda.

In light of the above, under any interpretation of Fuke in view of De Anda, a requisite suggestion to combine does not exist. In particular, the proposed modifications would render Fuke unsatisfactory for its intended purpose. Under these circumstances, a *prima facie* case of obviousness does not exist. MPEP §2143.01 V.

Claims 2-4, 6-9, 18, 21, and 22 depend from claim 1, and thus, for at least the above reasons, are allowable. In addition, with respect to claim 8, it is respectfully asserted that in light of the Office Action's apparent interpretation of Fuke as including the vertical guide rail 86A (or 86B) as a "first contact element" and the horizontal conveying surface 86a (or 86b) as being the "second contact element," a requisite suggestion to modify each of the components 86A, 86a or 86B, 86b to include a roller, as otherwise set forth in claim 8, does not exist. Once again, as described above, necessary functioning of the Fuke apparatus would be defeated were the guide rails 86A or 86B replaced with a roller. Thus, it is respectfully submitted that claim 8 recites additionally allowable subject matter. Additionally, it is respectfully asserted that in the absence of any prior art teaching, claims 21 and 22 cannot be *prima facie* obvious, and the rejections should be withdrawn.

Claim 10 recites a method of handling a film frame including moving contact elements relative to a respective support arm by determining a diameter of the film frame and horizontally positioning the contact elements based upon determined diameter. In rejecting claim 11, the Final Office Action relies upon a modification of Fuke in view of Aoki. It is respectfully

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submitted that a requisite motivation to implement this modification does not exist. In particular, Fuke has no need to account for, and adjust to, film frame diameter. Rather, the guide rails 86A, 86B are grossly spaced from one another (via the plates 85A, 85B) prior to placement of a wafer ring upon the conveying surfaces 86a, 86b. Subsequently, the plates 85A, 85B, and thus the guide rails 86A, 86B, are driven toward one another to contact and "rotate" a wafer frame placed upon the conveying surfaces 86a, 86b. That is to say, with the methodology of Fuke, even if a diameter of the wafer ring were determined, Fuke assumes that the wafer ring is rotationally displaced, such that the measured diameter has no bearing on subsequent operation. More particularly, regardless of any diameter, the methodology of Fuke assumes that the wafer ring has a relatively flat or linear side surface (FIG. 1) against which the flat guide rails 86A, 86B will bear and subsequently center/rotate. Thus, because Fuke has no need for determining a diameter of the film frame and horizontally positioning contact elements based upon the determined diameter, a requisite suggestion to modify the method of Fuke as otherwise set forth in the Office Action. As such, it is respectfully submitted that claim 10 is allowable over the cited art.

Notably, the Office Action on page 5, in rejecting claims 10, 14-17, and 19-20, states that "the modified apparatus of Fuke et al. would obviously be able to perform the recited method steps without any further modifications." It is respectfully submitted that this is an incorrect application of §103. Relative to the method limitations of claims 10, 12-17, 19, and 20, it does not matter whether the modified apparatus of Fuke "would" be able to perform the recited method steps; rather, the question is whether the combined references actually teach the recited method steps. It is respectfully submitted that the cited references do not teach each and every step, nor does a suggestion exist to combine the teachings in a manner satisfying the limitations of claim 10. In light of the above, it is respectfully submitted that claim 10 is allowable over the cited art. Claims 12-17, 19, and 20 depend from claim 10, and thus are also allowable.

Newly Presented Claim

Newly presented claim 23 depends from claim 1 and thus is allowable. In addition, claim 32 recites an elevator mechanism mounted to the load port (upon which the claimed cassette is

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selectively loaded), and that the elevator mechanism movably maintains a base arm of the frame support. Support for this language is found, for example, in Figure 1 and at page 4, lines 19-28. None of the cited references teach an elevator mechanism directly connected to both a load port and the base arm of a frame support, with support arms extending from the base arm. Thus, claim 23 recites additionally allowable subject matter.

CONCLUSION

In view of the above, Applicant respectfully submits that pending claims 1-4, 6-10, and 12-23 recite patentable subject matter, are in form for allowance, and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 1-4, 6-10, and 12-23 is respectfully requested.

No fees are required under 37 C.F.R. 1.16(b)(c). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 50-0471.

The Examiner is invited to telephone the Applicant's representative at the below-listed number to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to Timothy A. Czaja at Telephone No. (612) 573-2004, Facsimile No. (612) 573-2005. In addition, all correspondence should continue to be directed to the following address:

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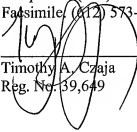
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